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now in allowable form and hereby respectfully request that the rejection thereto be withdrawn.

Responsive to the rejection of claims 1-4 under 35 U.S.C. § 112, 2nd paragraph, Applicants have amended claims 1-4 in a manner so as to improve the clarity thereof. However, Applicants traverse the Examiners assessment that it is not inevitable that a polarizer would result by providing just any two or more transparent bodies which have different refractive indexes to together in a manner set forth by Applicants in the claims. Applicants submit that such an argument is not directed to the clarity of the claims but to the breadth thereof. In accordance with MPEP § 2173.04, the breadth of a claim is not to be equated with the indefiniteness thereof. Accordingly, Applicants submit that claims 1-4 are now in allowable form and hereby respectfully request that the rejection thereof under 35 U.S.C. § 112, 2nd paragraph, be withdrawn.

Responsive to the rejection of claims 1-4 under 35 U.S.C. § 102(b) as being anticipated by "Fabrication and Observation of 3D Photonic Crystals Composed of Si/SiO₂ with Sub-Micrometer Periods" (Kawakami et al), Applicants have amended claims 1-4 and submit that claims 1-4 are now in condition for allowance.

Claim 1, as amended, recites in part:

wherein the shape of layers...at least one of has a regularly undulated structure along an x-axis, is uniform along a y-axis, and has a regularly or non-regularly undulated structure which has a larger pitch than along the x-Axis...

Applicants submit that such an invention is neither taught,
disclosed nor suggested by Kawakami et al or any of the other cited
references, alone or in combination.

5 Kawakami et al teaches a layer structure which has a hexagonal
lattice structure defined thereby. As such, within the x-y plane
thereof there are periodically spaced projections in any direction
that essentially prevent a regularly undulated structure along an x-
axis, uniformity along a y-axis, and/or an undulated structure which
10 has a larger pitch along the x-axis from occurring within such a
hexagonal lattice structure. Therefore, Applicants submit that
Kawakami et al fails to teach or suggest the present invention as
set forth in claim 1, as amended.

Furthermore, claim 1, as amended, recites in part:

15 the lamination...being configured for acting
against the light such that the light thereby
has a component whose incidence direction is
not zero from the z-axis in the 3-dimensional
or orthogonal coordinates (x, y, z) associated
20 with the polarizer

Applicants submit that such an invention is neither taught,
disclosed, nor suggested by Kawakami et al or any of the other cited
references, alone or in combination.

25 Kawakami et al discloses a hexagonal lattice structure which
has both raised and relief faces that are orthogonal to the z-axis
of the disclosed structure. Such orthogonal faces are configured
such that light impinging there upon would have a component whose

incidence direction would be zero from the z-axis of the structure.
Thus, Kawakami et al fails to teach or suggest the present invention
as set forth in claim 1, as amended.

For all the foregoing reasons, Applicants submit that claim 1,
5 and claim 2 depending therefrom, are now in condition for allowance
and hereby respectfully request that the rejection thereof based
upon Kawakami et al be withdrawn.

Claims 3 and 4, as amended, each recited in part:

10 [a] substrate which has at least one of
regularly arranged grooves, regularly arranged
linear projections, thin and long projections,
and thin and long grooves.

Applicants hereby submit that such an invention is neither taught,
15 disclosed, nor suggested by Kawakami et al or any of the other cited
references, alone or in combination.

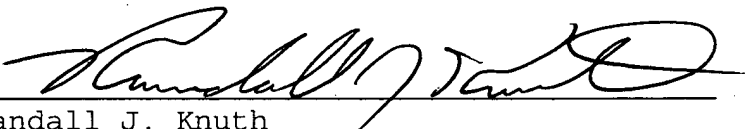
Kawakami et al discloses a polarizer with a hexagonal lattice
structure extending in its x and y directions. Such a structure has
regularly spaced relief portions and projections in any given
20 direction. Also, the nature of the structure is such that no relief
portion or projection extends for a significant distance in any
particular direction. Thus, Kawakami et al fails to teach or
suggest the present invention set forth in either of amended claims
3 and 4.

25 For all the foregoing reasons, Applicants submit that claims 3
and 4 are now in condition for allowance and hereby respectfully
request that the rejection thereof based upon Kawakami et al be

withdrawn. Applicants have added claim 5-7 in order to further
protect the patentable subject matter associated with this
invention. Applicants submit that the subject matter of these
claims is neither taught, disclosed, nor suggested by the sighted
art of record, nor of any new issues raised by such claims.
Applicants submit that new claims 5-7 are in condition for
allowance, allowance of which is hereby respectfully requested.

If the Examiner has any questions or comments that would speed
prosecution of this case, the Examiner is invited to call the
undersigned at 260/485-6001.

Respectfully submitted,


Randall J. Knuth
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RJK/stel10

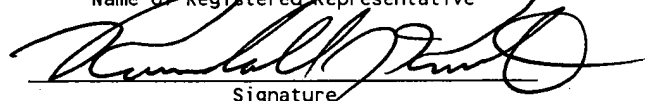
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Randall J. Knuth, Regis. No. 34,644
Name of Registered Representative


Signature
January 2, 2003
Date



From
MARKED-UP CLAIMS

Please amend claim 1 as follows:

1. (Amended) A polarizer [which has the] comprising:

a multilayered structure along a z-axis consisting of two or more transparent ^{layers types...} bodies which have different refractive

indices[,], ^{each said layer having a shape} wherein ~~the shape of layers~~ ^{said layer being} each of which is [the] a unit

of lamination ~~of each transparent body~~ ^{are} at least one of ^{which} has a

regularly undulated structure along an x-axis, ~~is~~ uniform along a

y-axis, [or] and has a regularly or non-regularly undulated

structure which [is] has a larger pitch than along the x-axis,

[and has]

the lamination along the z-axis repeating the shape[,]

[acts] being configured for acting against the light [which] such

that the light thereby has a component whose incidence direction

is not zero from the z-axis in the three-dimensional orthogonal

coordinates (x, y, z) associated with the polarizer.

Please amend claim 2 as follows:

2. (Amended) A polarized ¹ according to claim 1, wherein the

polarizer has a [more] first refractive medium layer containing

one of Si [or] and TiO₂ as a main component and a [less] second

refractive medium layer containing SiO₂ as a main component.

Interview summary →

Does not have to provide...

requires clarity and predictability
nothing has finalized...

1

Jeff Knapp

(Ref No.: 45,384)

Please amend claim 3 as follows:

3. (Amended) A method for producing a polarizer [which was prepared by] comprising the steps of:

laminating a ~~more~~ ^{first} refractive medium and a ~~less~~ ^{larger} refractive medium with ~~a~~ ^{larger} regularly repeating [the] shape, said laminating

5 performed by a film-forming method at least partly including ~~the~~ ^{upon which said laminating is to occur,} dry etching ~~on~~ ^{a single set of} a substrate ~~which has~~ ^{coextending} at least one of regularly arranged ~~grooves~~ ^{a single set of} and [or] regularly arranged ~~linear~~ ^{coextending} projections, ^{a single set of}

[or] thin and long projections, [or] thin and long grooves.

Please amend claim 4 as follows:

4. (Amended) A method of producing a polarizer, [which was prepared by] comprising the steps of:

laminating a [more] first refractive medium which contains one of Si and [or] TiO₂ as a main component and a [less] second refractive medium which contains SiO₂ as a main component with a regularly repeating [the] shape, said laminating performed by a film-forming method at least partly including [the] dry etching on a substrate, said substrate having [which has] at least one of regularly arranged grooves, [or] regularly arranged linear projections, [or] thin and long projections [or] and thin and long grooves.

Please add claims 5-7 as follows:

5. A polarizer according to claim 1, wherein the shape of layers at least one of has a regularly undulated structure along

the x-axis and is uniform along a y-axis.

6. A polarizer according to claim 1, wherein said first refractive medium layer has a first index of refraction, said second refractive medium layer has a second index of refraction, said first index of refraction being greater than second index of refraction.

7. A method for producing a polarizer according to claim 3, wherein said substrate has at least one of thin and long projections and thin and long grooves.